

Lecture #	Date	Day	Assignment	Papers to Read and Write a Report On	Quiz	Category	Topics	Reference Videos		
1	5-Jan	Monday	Assignment 1: SQL	Towards felicitous decision making: An overview on challenges and trends of Big Data + Big Data Systems: A Software Engineering Perspective	Quiz 1	Introduction	Overview of the class+ Understanding Big Data	<a href="https://youtu.be/0uc9zB-FmVk">https://youtu.be/0uc9zB-FmVk</a>		
2	7-Jan	Wednesday		Anatomy of a Database System			Applications Of Big Data: Wildfire + Transit Analysis + Emergency Response			
3	12-Jan	Monday		Access Path Selection and Joins+ Optimistic Concurrency			Overview of databases and their anatomy+ACID Properties	<a href="https://www.youtube.com/watch?v=pomxJOFVcQs">https://www.youtube.com/watch?v=pomxJOFVcQs</a>		
4	14-Jan	Wednesday		Assignment 2: MongoDB			Relational Databases : SQL and Joins and access	<a href="https://youtu.be/HXV3zeQkqGY">https://youtu.be/HXV3zeQkqGY</a>		
5	21-Jan	Wednesday					Relational Databases: Indexes, Locks and Concurrency -00	<a href="https://youtu.be/ihXf8p_-UwU">https://youtu.be/ihXf8p_-UwU</a>		
6	26-Jan	Monday		Storage		Distribution/Partitioning: Fault Tolerance+ CAP Theorem	<a href="https://www.youtube.com/watch?v=R_Fxz14tr2M">https://www.youtube.com/watch?v=R_Fxz14tr2M</a>			
7	28-Jan	Wednesday				Column vs Row Oriented Databases	<a href="https://www.youtube.com/watch?v=Wv1fCeD06YI">https://www.youtube.com/watch?v=Wv1fCeD06YI</a>			
8	2-Feb	Monday				Introducing NoSQL Databases: Need and Differences/MongoDB	<a href="https://www.youtube.com/watch?v=QwevGzVu_zk">https://www.youtube.com/watch?v=QwevGzVu_zk</a>			
9	4-Feb	Wednesday				BigTable and DynamoDB	BigTable: <a href="https://www.youtube.com/watch?v=KaRbKdMlnuc">https://www.youtube.com/watch?v=KaRbKdMlnuc</a> DynamoDB: <a href="https://www.youtube.com/watch?v=OfZgHXsYoNE">https://www.youtube.com/watch?v=OfZgHXsYoNE</a>			
10	9-Feb	Monday				InfluxDB	<a href="https://www.youtube.com/watch?v=OoCs8odmpM">https://www.youtube.com/watch?v=OoCs8odmpM</a>			
11	11-Feb	Wednesday	Assignment 3: Influx and Pandas	Graph DataBase Paper	Quiz 1	Batch Processing	Graph Databases	<a href="https://www.youtube.com/watch?v=GekQqFZm7mA">https://www.youtube.com/watch?v=GekQqFZm7mA</a>		
12	16-Feb	Monday					Overview of Pandas and Parquet	Pandas: <a href="https://www.youtube.com/watch?v=vmEHCjofslg">https://www.youtube.com/watch?v=vmEHCjofslg</a> Parquet: <a href="https://www.youtube.com/watch?v=pFS-FScophU">https://www.youtube.com/watch?v=pFS-FScophU</a>		
13	18-Feb	Wednesday		Fault Tolerance Paper	Quiz 2		Project Overview and Discussions			
14	23-Feb	Monday		Assignment 4: Hadoop and MapReduce			Map Reduce	<a href="https://www.youtube.com/watch?v=b-lvmXoO0bU">https://www.youtube.com/watch?v=b-lvmXoO0bU</a>		
15	25-Feb	Wednesday		Orchestrating Big Data	Batch Processing	Map Reduce				
16	2-Mar	Monday		map-reduce-bookchapter.pdf + MapReduce: Simplified Data Processing on Large Clusters		Spark	<a href="https://www.youtube.com/watch?v=lQfG0faDrzE">https://www.youtube.com/watch?v=lQfG0faDrzE</a>			
17	4-Mar	Wednesday		Dask		<a href="https://www.youtube.com/watch?v=EybGGLbLipI">https://www.youtube.com/watch?v=EybGGLbLipI</a>				

### Spring Break

18	16-Mar	Monday	Assignment 4: Hadoop and MapReduce	map-reduce-bookchapter.pdf + MapReduce: Simplified Data Processing on Large Clusters	Quiz 3	Streaming	Overview (Dataflow Model) + Kafka and Pulsar and ZooKeeper			
19	18-Mar	Wednesday		ComparisonOfApproachesToLargeScaleDataAnalysis.pdf			Kafka and Pulsar and ZooKeeper	<a href="https://www.youtube.com/watch?v=JalUUBKdcA0">https://www.youtube.com/watch?v=JalUUBKdcA0</a>		
20	23-Mar	Monday		Assignment 5: Spark			SparkStreaming	<a href="https://www.youtube.com/watch?v=UuRhEmgqhRM">https://www.youtube.com/watch?v=UuRhEmgqhRM</a>		
21	25-Mar	Wednesday					Storm	<a href="https://www.youtube.com/watch?v=0mlEUibitzk">https://www.youtube.com/watch?v=0mlEUibitzk</a>		
22	30-Mar	Monday					Apache Flink	<a href="https://www.youtube.com/watch?v=G77m6Ou_kFA">https://www.youtube.com/watch?v=G77m6Ou_kFA</a>		
23	1-Apr	Wednesday	Assignment 6: Kafka and Containers	Kafka: a Distributed Messaging System for Log Processing	Quiz 4	Analytics and Real-world Use Cases	Clustering	<a href="https://www.youtube.com/watch?v=eg8DJYwdMvg">https://www.youtube.com/watch?v=eg8DJYwdMvg</a>		
24	6-Apr	Monday		Borg, Omega, and Kubernetes			Pagerank	<a href="https://www.youtube.com/watch?v=meonLcN7LD4">https://www.youtube.com/watch?v=meonLcN7LD4</a>		
25	8-Apr	Wednesday					Anomaly Detection	<a href="https://www.youtube.com/watch?v=12Xq9OLdQwQ">https://www.youtube.com/watch?v=12Xq9OLdQwQ</a>		
26	13-Apr	Monday					GeoInformational Systems Processing (Traffic and Incident Data)	None		
27	15-Apr	Wednesday	Assignment 7 Visualization	Efficient Data Management for Intelligent Urban Mobility Systems	Project Presentations	Project Presentations	Project Presentations 1			
28	20-Apr	Monday		Project Presetation 2						